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February 12, 2001

Gary Armstrong, Public Works Director
City of Snoqualmie
P.O. Box 987
Snoqualmie, WA 98065

RECD FEB 14 2001

Dear Mr. Armstrong:

Re: Task Order No. 17: Flood Reduction Project Third Party Review

We have completed our review of potential downstream impacts of the Snoqualmie River Flood Reduction Project. The review consisted of an assessment of the results of an analysis performed by the Corps of Engineers (COE) and conveyed to us on 2 February 2001. The COE analysis concludes that the project would cause a maximum rise of 0.1 ft in peak stage at Carnation during a 100-yr flood event. We agree that this is a reasonable estimate of project impact at Carnation.

Our opinion is based in part upon a comparison with an earlier analysis performed in the mid-to-late 1970's by the COE. In that work, unsteady-flow numerical modeling indicated that the effect of a then-proposed flood-control project would be a rise in 100-yr flood level at Carnation of no more than 0.14 ft. The then-proposed project would have been much more extensive than the present-day project, as it would have contained the 100-yr flood entirely within the main channel of the Snoqualmie River through the City of Snoqualmie, eliminating essentially all floodplain storage. (This was proposed to be accomplished by channel lowering and widening which would lower the 100-yr-flood profile by up to three ft through the City.) By contrast, the COE analysis for the present-day project indicates that it would lower the 100-yr flood profile by approximately one ft through the City. Thus, the floodplain storage potentially lost due to the present-day project in a 100-yr flood would be expected to be but a fraction of that lost due to the 1970's project. As a result, downstream impact would be expected to be correspondingly less than the 0.14 ft predicted for the 1970's project. In that light, the February 2001 estimate of a maximum rise of 0.1 ft in 100-yr-flood level at Carnation seems reasonable, and perhaps somewhat conservative.

Although the recent COE analysis does not quantify impacts at locations other than Carnation, it is worth noting that the 1970's COE analysis indicated that the rise in 100-yr-flood level at Fall City, Duvall and Monroe would be on the order of 20 % greater, 65 % less, and 95 % less, respectively, than the rise at Carnation. By applying these factors to the present-day COE prediction for Carnation, one could infer that the maximum rise might be on the order of 0.12 ft at Fall City, 0.03 ft at Duvall, and 0.01 ft at Monroe.

cc: Mayor Council Paul Cooke COE, Tom Beal K

Should you have any questions about our conclusions, please feel free to call the undersigned. We plan to attend the public hearing in Carnation on 14 February, and will be prepared to answer any questions about our review at that time.

Yours very truly,
NORTHWEST HYDRAULIC CONSULTANTS

D.G. Mutter, Ph.D., P.E.